

**REMARKS**

Claims 1, 2 and 4-10 are rejected, and claim 15 is withdrawn from consideration as being directed to a non-elected invention. Review and reconsideration on the merits are requested.

Claim 6 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite with respect to the scope/meaning of "inorganic material."

Applicants reply as follows.

Claim 1 from which 6 depends already recites that the conductor layer comprises both SiO<sub>2</sub> and ceramic particles having an average particle size of 2 μm or less, thus making claim 6 redundant.

In view of the above, claim 6 has been amended to recite that the ceramic particle (nonvitrifiable after sintering) is uniformly dispersed in the conductor layer. Support is found, for example, at page 9, lines 7-14, page 38, lines 14-18, page 39, lines 11-16 and page 39, line 22-page 40, line 9 of the substitute specification.

It is respectfully submitted that claim 6 as amended herein fully complies with 35 U.S.C. § 112, and withdrawal of the foregoing rejections is respectfully requested.

Claims 1, 2, 4 and 6-10 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,296,189 to Kang et al.

Kang et al was cited as teaching a conductive composition meeting each of the terms of the rejected claims, including copper and alumina particles, which composition may further contain titania (TiO<sub>2</sub>) and silica (SiO<sub>2</sub>) having the same function as alumina particles.

Applicants respond as follows.

Claims 1 and 2 (and also withdrawn claim 15) have been amended to recite that the  $\text{SiO}_2$  particle has an average particle size of 40 mm or less, to thereby exclude Kang et al from the scope of the amended claims. Support is found, for example, at page 7, lines 18-20 of the specification. In this manner, the present invention avoids warping or waving of the wiring board which is otherwise generated if the average particle size exceeds 50 mm. More particularly, the amendment to claim 1 excludes the range of from "0.05 to 0.1  $\mu\text{m}$ " for  $\text{Al}_2\text{O}_3$  disclosed by Kang et al., where silica ( $\text{SiO}_2$ ) is said to have the same function as alumina particles (assuming *arguendo* that the average particle size of  $\text{Al}_2\text{O}_3$  as a retardant is also applicable to silica when used as a retardant).

The fact that Kang et al fails to disclose an average particle size with the silica retardant means that Kang et al does not disclose each and every element of amended claims 1 and 2. Accordingly, for this reason alone, it is respectfully submitted that the present claims are not anticipated by Kang et al.

Moreover, there is no apparent reason which would lead one skilled in the art to decrease the average particle size below a lower limit of 0.05  $\mu\text{m}$  as taught by Kang et al, such that the amended claims are also patentable over Kang et al.

Claims 8 and 9 have been amended to depend from claim 1.

New claims 16-18 find support, for example, at page 7, lines 18-24 of the specification. Support for new claim 19 is found, for example, at page 17, lines 18-24 of the specification. Support for new claim 20 is found, for example, at page 18, lines 16-22 of the specification.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kang et al. Applicants rely on the response above with respect to the rejection of claims 1, 2, 4 and 6-10 over Kang et al.

Withdrawn method claim 15 has been amended to include all of the limitations of amended claim 1. Applicants respectfully request rejoinder upon allowance of the product claims.

A basic premise of the rejection is that not only is Kang et al said to disclose that silica  $\text{SiO}_2$  has the same function as alumina particles, the Examiner *assumes* that the particle size of from “0.05 to 0.1  $\mu\text{m}$ ” for  $\text{Al}_2\text{O}_3$  is likewise applicable to  $\text{SiO}_2$ . However, no such equivalence as to particle size is disclosed by Kang et al. Even if the prior art did lead one of ordinary skill to substitute silica  $\text{SiO}_2$  for the alumina  $\text{Al}_2\text{O}_3$  of Kang et al of the same average particle size (which Applicants would dispute), there is no apparent reason which would lead the skilled artisan to *reduce* the average particle size of the  $\text{Al}_2\text{O}_3$  particle as taught by Kang et al having a lower limit of 0.05  $\mu\text{m}$  to an average particle size of 40 nm or less as required by amended claims 1 and 2.

Withdrawal of all rejections and allowance of claims 1, 2, 4-10 and 15-20 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

AMENDMENT UNDER 37 C.F.R. § 1.111  
Application No.: 10/620,346

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Respectfully submitted,



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